305(b) Consistency Workgroup Meeting
Exploring the Connection Among WQS, 305(b) Reports and 303(d) Lists
October 17-19, 2000
Hyatt Regency Crystal City
2799 Jefferson Davis Highway, Arlington VA
(703) 418-1234

Note: this meeting will not address or discuss the new TMDL regulations.

MEETING APPROACH

Welcome to the October 2000 meeting of the Workgroup on 305(b) Consistency. Attached are the meeting **Agenda** and **List of Speakers.**

The meeting's **focus** will be on:

- **Monitoring for Comprehensive Assessment and for Listing Impaired Waters** (Tuesday afternoon); and
- **Assessing Water Quality Standards Attainment Status** (Wednesday).

Information on characterizing causes and sources of impairments will be presented briefly on Thursday morning.

On Thursday, participants will concentrate on the **issues of greatest concern** arising out of discussions on the two previous days. Three or four such issues will be identified by the participants for further deliberation in break-out sessions and a wrap-up plenary session.

In addition to facilitating an exchange of information, EPA's Assessment and Watershed Protection Division (AWPD) wishes to obtain **as much input as possible from each participant** on the meeting topics. Because approximately 120 State and EPA representatives are expected to participate in the meeting, plenary session discussion time will necessarily be limited. Therefore, participants are encouraged to take advantage of all of the following opportunities to express their views, communicate with EPA decision-makers, and share information with each other:

- **Participate in Open Facilitated Discussions following each panel presentation;**
  These discussions will allow not only for questioning of panel members, but also for brief suggestions, observations and information exchange among all participants on the relevant topic.
- **Complete and submit responses to the questionnaires in your packet;**
  Responses will be summarized and used to select issues for concentrated discussion during Thursday's break-out and plenary sessions. Responses will also receive further consideration by EPA after the meeting.

- **Participate in Break-Out Sessions on Thursday;**
  These sessions will explore key issues in more depth than would be possible in the full meeting. Break-out groups will be asked to develop options and recommendations on the key issues for EPA's consideration.
- **Ongoing Communication.**
  AWPD welcomes your continuing input after the meeting.

Ground Rules: The meeting will be as informal as the size of the group allows. When providing input, simply keep in mind the need to be brief, stay on topic, and respect differing views. Have fun!

Speaker List

October 17, 2000

Describing the Quality of States' Waters for 305(b) Reporting: To What Extent are State Waters Meeting WQS?

Tom Van Arsdall, KY—Progressing to a More Comprehensive Monitoring Coverage in Kentucky: Using Targeted and Random Networks in a Multi-Agency Watershed Approach

Michael Arcuri, WV—West Virginia's Approach to Monitoring and Assessment

Linda Schmidt, IN—IDEM ‘s Use of Probabilistic Monitoring Results for Comprehensive Watershed WQ Assessment: Advantages & Limitations of this Sample Design Program

Linked Monitoring to Target Waters

Dave Chestnut, SC—Identifying Impaired Waters as Part of a Monitoring Strategy

Richard Shertzer, PA—Pennsylvania's Statewide Waterbody Assessment Program: A Biological Approach Linked to GIS.

Nancy Immesberger, NJ—Integrating 305(b) Comprehensive Assessment Guidance with State 303(d) Responsibilities: Follow-up Monitoring and Listing Based on Extrapolated Assessments

October 18, 2000

What Metrics or Parameters are Appropriate for Assessing WQS Attainment Status?

Dave Chestnut, SC—Representative Parameter Suites/Indicators for Assessment of Specific Uses; Advantages and Disadvantages of Different Indicator Types for Assessing Specific Uses

Evan Hornig, USGS—Developing a Staged Approach to Parameter Selection for Assessing Aquatic Life Use Support
Neal Kammen, VT—Vermont's Use of Fish Tissue Data on Mercury to Assess Impacts to Fish Consumption Use
Documenting Data Quality

Bob Bukantis, MT—An Overview of Montana's Sufficient Credible Data Scoring Process

Diana Marsh, AZ—Designing an Approach for Implementing Arizona's Credible Data Law: Developing Data Quality Screening Levels; Identifying Level of Data Needed to Support Different Decisions
Jack Smith, WY—Wyoming Credible Data Statute: the Nature of the Legislation; Misconceptions; and How Wyoming DEQ will Implement the Provisions
Interpreting Data to Assess WQS Attainment Status: Statistical Tools

Charles Martin and Len Shabman, VA—Statistical Assessment Tools and Virginia DEQ's Application of the Binomial Approach

Daryll Joyner, FL—Florida's Approach to Interpreting Exceedances of Water Quality Criteria for 303(d) Listing Purposes

Interpreting Data to Assess WQS Attainment Status: Use Assessment Approaches

Derek Smithee, OK—Oklahoma's Use Support Assessment Protocol: Lessons Learned

Jason Heath, ORSANCO—Approach/Methodology for Public Water Supply Use Assessments
Wayne Davis, EPA—Key Data Interpretation Needs for Using Biological Data in Water Quality Standards Attainment Decisions: Lessons from MAIA
Doug Burnham, VT—Development and Implementation of Macroinvertebrate and Fish Community-Based Decisions: Assessing Aquatic Life Support Based on Deviation from the Reference Condition for Selected Wadeable Streams

Integrating Multiple Types of Data for Attainment Decisions

Jim Pendergast, EPA—Clarifying Misconceptions about the Independent Applicability Policy

Perri Phillips, MT—Integrating Data of Multiple Types and Quality to Make Use Support Determinations: An Overview of Montana's Process
Cynthia Grafe, ID—Idaho's Process for Integrating Multiple Types of Data to Make Use Support Determinations
Al Hindrichs, LA—A New Assessment Protocol for Dissolved Oxygen; the Need for Improved Coordination among Standards, Assessment and Implementation for More Effective Water Quality Management

October 19, 2000

Discussion of Strategies to Characterize Causes and Sources Contributing to Impairments

Sue Norton, EPA—Stressor Identification Protocol for Identifying the Causes (pollutants/stressors) Contributing to Impairments of Biological Communities in Aquatic Systems

Gregg Good, IL—Documenting Decisions for Attributing Cause and Source Categories to Impaired Waters

Facilitated Discussion

Summary of discussion following the panel "Describing the Quality of States' Waters for 305(b) Reporting: To What Extent Are State Waters Meeting WQS?"

Theme: Some states do not have the resources necessary to implement monitoring designs for comprehensive assessment.

- Resources vary significantly from state to state.
- The size of monitoring staff and the amount of funding are both key factors.
- The size of monitoring staff in the states presenting at this session ranges from 15 to 21 individuals. Other states noted that they have fewer staff.

Theme: Targeted versus probabilistic monitoring designs.

- A state representative raised the concern that probabilistic monitoring alone does not help a state to locate impaired waters that were not sampled. In response, EPA pointed out that no less coverage is provided than when a state uses only a targeted design. In that case, there are still impaired waters that do not get sampled.
- Some states remarked that their managements do not think probabilistic monitoring is necessary. The focus for states has been site-specific, primarily on TMDL development, which probabilistic monitoring does not address.
- States discussed the representativeness of targeted and probabilistic monitoring sites, such as how far results should be extrapolated from a sampling site. There is no clear answer. Some states are using more conservative estimates now than previously. The distance extrapolated should depend on land use and the size of the stream. One state pointed out a potential issue in that targeted sites are always selected for a certain habitat, but probabilistic sites are not always selected for habitat; therefore there may be a problem mixing the data or assigning results to entire reaches.

- One state asked whether probabilistic designs extrapolate survey results based on stream order. In other words, are results averaged and applied to the total number of stream miles in the watershed, or are the results for first-order streams applied to a greater percent of the total miles? If not, this is a weakness. EPA responded that in general the results are averaged and no weighting is generally given to stream order.
- States expressed concerns over the 303(d) implications of probabilistic monitoring. Some states do not want to have to do a TMDL for a site that was sampled as part of a probabilistic survey. Perhaps probabilistic data and sites not be made available to the public. EPA remarked that while Section 303(d) requires all data to be considered, it does not have to be used. Therefore, a state can explain that the data were taken for a different purpose and are not appropriate for 303(d) listing. There was some debate over whether doing a TMDL for a probabilistic site would bias results and prevent the site from being useful in future surveys.

Theme: Should probabilistic monitoring be used for uses other than aquatic life (e.g., recreation, fish consumption, drinking water, etc.)?

- At least one state uses probabilistic monitoring for fish consumption use. Other states indicated that probabilistic monitoring is used only for ALUS.

Theme: 303(d) listed waters should be consistent with 305(b) waters.

- There was a general consensus on this issue.
- EPA remarked that where probabilistic monitoring shows a greater percentage of impaired waters than targeted monitoring, this means the state needs to locate more impaired waters for 303(d) listing.

Facilitated Discussion

Summary of discussion following the panel "Linked Monitoring to Target Waters"

Theme: QA/QC of monitoring data.

- Some states are implementing annual training events and audits. EPA is seeking review of a draft document that addresses QA/QC of monitoring designs (See http://www.epa.gov/quality/qa_docs.html).

Theme: Involving ground water data and getting ground water folks on board.

- Some states are seeing a greater level of effort to get the ground water community involved, but are still not getting data that they can use.

Theme: Coastal and estuarine data.

- Issue for many states is how to describe the aerial extent associated with their off-shore monitoring. Guidance is needed.
- Many states report only beach or shellfishing (pathogen) data due to lack of resources.

Theme: Bacteria - "can we lay the issue to rest?"

- States remarked that a swimming closure is associated with a different level of pathogens than the water quality criterion for fecal coliform that many states have adopted into their water quality standards. Violations of the standard may not preclude swimming.
- One state commented that closures are often related to other causes, such as wildlife, pets, etc. Another state presented an example where dog waste is causing standard violations. What can states do in cases like this?
- Another state explained that because of the TMDL process, the public is demanding fecal typing. The state is working with the EPA Region to develop criteria for different levels of contact (e.g., immersion, beach, etc.).
- The issue of new indicators (fecal strep, enterococci) was raised. States expressed a need to have EPA support for making assessments based on different data. One state related that despite adopting new criteria, the problem hasn't gone away, only the sources have changed (e.g., dogs, horses).

Theme: Combining probabilistic and targeted monitoring

- Several states agreed that a combination of approaches is needed to address both the "big picture" and 303(d) issues. However, a number of states said they can only do targeted monitoring because of resource issues.

Theme: Data sharing

- States have sometimes not been able to use data shared by other agencies as much as desired due to different monitoring objectives, QA/QC requirements, etc.
- The public doesn't understand the amount of work required for a state to use 3rd-party data in 305(b).
- A number of attendees have had success in working with 3rd parties to meet the state's QA/QC and data needs. Some successes have included asking volunteer groups to change what and how they monitor, creating QA/QC coordinator positions, and meeting with stakeholders.
- Another approach is to use reports from 3rd party groups to guide state assessment decisions and future monitoring rather than subjecting the 3rd parties to rigorous QA/QC requirements.
- The federal government just published a unified federal policy that directs federal agencies to cooperate with states in the assessment of watersheds and requires consistency with state standards.

- Several states have developed monitoring councils to help coordinate and encourage data sharing and adequate QA/QC. EPA supports this approach and the work of the National Monitoring Council.

Facilitated Discussion

Summary of discussion following the panel "What Metrics or Parameters Are Appropriate for Assessing WQS Attainment Status?"

Theme: Need for approved methods.

- One state said it is a problem to wait for EPA approved methods in 40 CFR Part 136 before developing water quality standards, .e.g., for enterococci and E. coli.
- EPA's view is that states do not need an approved method to adopt a water quality standard. However, EPA is moving forward with methods for Part 136. Methods for enterococci and E. coli are out there. There are methods, but not through the Part 136 process.
- EPA is pushing hard to move forward with new indicators because of a new law (the "beach bill") which includes a requirement for coastal states to adopt latest EPA criteria by April 2004. There is a goal for states to adopt new indicators into standards by 2003.
- Regarding pathogen criteria, EPA is looking at full body contact. Shellfish folks say there is no epidemiological-based action level for enterococci and E. coli for shellfish consumption use. There are regional differences that need to be addressed. The Gulf Program will explore these issues as they pertain to shellfishing use.

Theme: Mercury TMDLs

- Why should states spend their limited resources on difficult-to-do Mercury TMDLs since it is a regional or national problem? Can EPA have national or regional TMDL approach for Mercury?
- EPA response: Mercury is one of the toughest situations. EPA is now looking at TMDLs that are being required and may develop an approach or guidance for doing this nationally. Not available now, but EPA is working on it.
- There are gradients of Mercury deposition across the country, and not all watersheds process Mercury the same way. Even if EPA can do large TMDLs, the state needs to be involved. A case study is the Savannah River in terms of helping states model using their own watershed characteristics.

Discussion Theme: Relationship between 305(b) and 303(d)

- Water quality assessors generally know when a water is impaired, but now due to the link between 305(b) and 303(d) listing, need rules spelled out, e.g., to "make the biologists lay it out on paper."

- A state expressed the opinion that there should be different thresholds for impairment under 303(d) and 305(b). Another state sees 305(b) has having multiple facets of reporting, but the use attainment component should be 1:1 with 303(d). That is, partial and nonsupport should equate to 303(d) listing, with the same criteria.
- EPA asked for feedback on the partial supporting category under 305(b).

Discussion Theme: The use of ambient toxicity testing data in 305(b) assessments or 303(d) listing

- Only a few states use ambient toxicity testing. Texas does list waters based on ambient toxicity testing; EPA Region 6 does the testing for them. Also, there is some limited use in Kentucky. Alabama uses it primarily to consider de-listing streams where benthics showed impairment. Connecticut did limited acute sediment toxicity analysis on highly impacted streams (samples analyzed by Region 1) and basically got no toxic response; they have not found it to be very useful because of insensitivity of test.

Discussion Theme: The use of threatened/endangered species data in 305(b) assessments or 303(d) listing

- In a New England hydroelectric project, researchers have measured high mercury levels in endangered loons. They use in weight of evidence approach that includes threatened and endangered species.
- Only one state mentioned using USFWS Endangered Species Act (ESA) listing in 303(d) listings and a few states mentioned considering ESA in weight of evidence evaluations.
- As EPA write guidance, should there be different criteria for threatened/endangered species versus non-threatened/endangered species? Response from one state was that criteria should be the same, should encompass all species; if endangered species are present, pay more attention, but do not change approach to assessment/listing.
- One state mentioned taking steps in WQS to develop management strategy for threatened and endangered species where there are water quality concerns. They will work with USFWS on this issue through basinwide planning.
- EPA noted that as a first guide, criteria to protect aquatic life uses should be used. If a state has info on how to protect a specific species, need to take that into account.
- One state had a Section 7 consultation with USFWS re: endangered mussels and learned that their metal criteria were not protective enough.

Discussion Theme: Partial/nonsupport and major/moderate/minor categories.

- A state expressed the view regarding partial support that public impression is important. Just "good and bad" is not adequate.

- EPA should decide whether major/moderate/minor categories for causes and sources of impairment are needed anymore. These categories were not used in the 1998 National Water Quality Inventory Report
- One state suggested that the tiered approach should work well, and asked what would happen regarding delisting if a state went that route, with prior listings made using old approach. Some waterbodies that were listed under the old approach would not be listed under a tiered approach.
- It is EPA's view that when the science supports new and better methods, they should be used, even though such changes may be a challenge to explain to the public.
- It would be hard to communicate a "maybe" category, and would need to be done carefully.
- This topic will be taken up in one of the break-out sessions.

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Facilitated Discussion

Summary of discussion following the combined panels "Documenting Data Quality" and "Interpreting Data: Statistical Tools"

Theme: Credible data

- States are generally enthusiastic about establishing a credible data approach.
- One additional benefit of Montana's approach is having the information available to the public.
- Several states expressed a need for national consistency on the credible data issue so that all Regions are following the same guidelines with their states. Guidelines should deal with both monitored and evaluated data.

Theme: The binomial approach to making use support determinations.

- States using the binomial method do not correct for extreme conditions or for high-magnitude exceedances.
- VA does not use the binomial method for toxics; FL plans to do so and noted that their WQC are based on chronic criteria. Neither VA nor FL have used the binomial approach for delisting.
- In general, less than 20 samples is considered statistically weak for making use support determinations based on the 10% exceedance rule, with or without the binomial method.
- Several states expressed concern that waters should not be listed based on only 1 or 2 exceedances; metals are often the issue.
- Several states are interested in the binomial approach or other statistical approaches for dealing with small sample size.

Theme: Refining the 10% exceedance rule for non-toxicants.

- EPA's Water Quality Standards program would like to work on the issue of refining the 10% exceedance rule based on frequency, duration, and magnitude of exceedance.

Theme: Consistency between 303(d) and 305(b)

- Currently, several states automatically include 305(b) impaired waters on their 303(d) lists even if the assessments are based on minimal data (i.e., low confidence).
- Data poor states may tend to have inconsistencies between 305(b) impaired waters and 303(d) listed waters due to inadequate data to support listing decisions.
- Internal consistency within a state is sometimes an issue regarding what to list or not list. Guidance should create consistency.
- One state mentioned putting their 305(b) list out for public comment and another state mentioned involving the public in assessments via basinwide workshops.
- One option for a new category is "Fully Supporting, Impacts Observed."

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Facilitated Discussion

Summary of discussion following the panel "Use Assessment Approaches"

Theme: Setting reference conditions.

- One member questioned the validity of eliminating 25% of reference sites in setting reference conditions. The danger is that later, when sampling unknown sites, the agency might find them impaired when they are not.
- EPA staff noted that in establishing reference conditions, the initial sites are always viewed as candidate reference sites. We don't know which sites truly make up reference condition. EPA sees this approach as building confidence and accuracy, not tossing out data.
- Western states reported problems with reference condition when reference sites have been devastated by forest fires. How to take into account natural variability? Several views were expressed: (1) data for such reference sites should be taken out of the reference metrics for samples taken around the time of an extreme event; (2) this is part of natural variability of reference condition; (3) we should not revise reference conditions after forest fires (which are often started by human activity); (4) it is more important to look at what percent of streams are taken out of reference conditions (versus particular streams); (5) it is important to study how natural systems recover over time.

- Recent studies suggest that there may be a 30-year oscillation in natural events, requiring twice that long to detect these natural changes.
- Once you have reference condition, the grey zone between impaired and unimpaired can be difficult to assess. One state has used a consensus approach to define the grey zone. The agency was glad to have some guidelines to follow for making determinations in the grey zone.

Theme: Biocriteria.

- Many of the state staff at the session said they use macroinvertebrate data to make use support decisions. Two of the states have biocriteria. Approximately a dozen of the states at the session are trying to develop biocriteria.
- Several attendees asked EPA to put more emphasis on helping states develop these criteria to back up use support decisions.
- EPA does want to see states adopt biocriteria into their standards for ALUS. EPA has not developed a rule to require biocriteria, although it was considered. EPA hopes that states, as they use the data more, see the benefit of having such standards. In the meantime, states can use biological assessments to implement narrative criteria and develop translator mechanisms to support development of TMDLs and NPDES permits, as appropriate.
- While EPA is not be forcing states to develop numeric biocriteria, the Agency has helped states further their capabilities. If it were forced externally or internally, states would be in a position to do this much more quickly now. Several states are also considering biocriteria for fish.

Theme: Bordering states.

- EPA encourages states to look at what is happening over the border or go to interstate commissions. Inconsistencies in assessments and TMDLs different across state borders is a concern. States should talk to EPA Regions for information.
- Some states share borders with states in other EPA Regions. It is difficult to share data across EPA Regions.

Theme: Drinking water and fish consumption.

- In 1996, at least 15 states did not assess drinking water use. The Clean Water Act requires that all uses be assessed. EPA urges states to coordinate their assessments under 305(b) and SDWA/source-water protection assessments.
- OST is drafting a memo on fish advisories and 305(b)/303(d) will provide some guidance that takes into account the peculiarities of those programs. It will point out that waterbody-specific data is more important than other data for listing decisions.

Theme: Nutrients and eutrophication.

- The decision-making process on eutrophication related issues is a major challenge (second to bacteria). For example, there is the issue of whether criteria should be based on chlorophyll a or species. Six or seven states indicated that they wrestle with nutrient/eutrophication water quality standards issues.

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Facilitated Discussion

Summary of discussion following the panel "Integrating Multiple Types of Data for Attainment Decisions"

Theme: EPA's Independent Applicability (IA) policy

- EPA wants examples from states of conflicts in attainment status based on different types of data.
- A state responded that although use attainability analyses (UAAs) will solve problems of needed refinements to water quality standards, workload is a huge issue. For example, if a state has many streams that don't meet DO criteria, they would rather do biological assessments than do thousands of DO measurements. That is, let biological data trump water chemistry data.
- EPA is looking at making IA more flexible. In defense of chemical data, bioassessments tell us a lot about today; chemical conditions allow us to predict the future.
- Different criteria have different benefits. One attendee asked that EPA be clear that chemical data are not always better for predicting trends and that predicting trends is not the main purpose of assessments.

Theme: Dissolved oxygen issues

- Several other states besides Louisiana have issues with naturally occurring low DO.
- A state with an extensive site-specific standards program expressed the view that it is worth the trouble to establish sound criteria. Otherwise the regulated community will force the state agency to spend too much time defending its WQSs.

Theme: Diatom assessment methods

- Will diatom assessment methods survive the test of time? Idaho thinks so and noted that this community is used in Europe. The state is working with national experts and will publish a paper in the next year. Diatoms represent lower trophic data, and are good for integrating chemistry. Also, it is a quick, easy sampling method--just scrape slime and send it in to the laboratory.